

LIST OF THE LEPIDOPTERA COLLECTED IN EAST AFRICA,
1894, BY MR. WILLIAM ASTOR CHANLER AND LIEUTEN-
ANT LUDWIG VON HÖHNEL.

By W. J. HOLLAND, Ph. D.

THE collection submitted to me for examination and determination by the authorities of the United States National Museum had already been partially classified by Mr. Martin L. Linell, of the Department of Entomology. Twenty-five species recorded in the accompanying list were not represented in the assemblage of specimens submitted to me, Mr. Linell having determined them, as he writes me, upon careful comparison with specimens previously labeled by me in other collections contained in the National Museum. The species thus determined by Mr. Linell, which I have not personally examined, and for the correct determination of which I rely upon him, are *Papilio leonidas*, *P. nireus*, *P. demoleus*, *Salamis anacardii*, *Palla varanes*, *Amauris dominicanus*, *Hypolimnas misippus*, *Danais petiverana*, *D. klugii*, *Tingra mombase*, *Precis natalica*, *P. elgira*, *P. elowantha*, *Euphadra neophron*, *Melanitis leda*, *Hamanumida daedalus*, *Pyrameis cardui*, *Eurytela dryope*, *E. hiarbas*, *E. ophione*, *Hypanis ilithyia*, *Junonia boopis*, *J. cebrene*, *J. clelia*, *Callidryas florella*, *Terius regularis*, and *Cydligramma latona*.

As to the exact localities from which the specimens came, I have no certain knowledge. Mr. Linell writes that he was informed by Mr. Chanler that the greater number of the specimens were taken upon the Jombene Range, northeast of Mount Kenia. It is to be regretted that a more exact record of localities and dates of capture was not kept.

An examination of the list shows that while a certain proportion of the species therein enumerated have a wide range over the whole of tropical Africa, a much larger proportion are such as belong to the faunal subdivision which includes the region covered by Natal and the Transvaal. The study of collections from Eastern Africa is revealing to us gradually that there is a rather well-defined line of demarcation between the species occupying the region of the grassy steppes, which extend through the southern part of the continent northward along the eastern coast, and the fauna of the more densely wooded region of the Congo, the Ogové, and their tributaries. The butterflies of the region of Kenia and Kilimanjaro are more nearly related to those of the region of the Cape than to those of tropical West Africa. Dr. R. Bowdler

Sharpe¹ has given us a most instructive paper upon "The zoo-geographical areas of the world." This eminent ornithologist has recorded a distinction between what he delimits and names as the "South African Sub-Region" and the "East African Sub-Region." He, however, says that "the East African Sub-Region is not a very natural division, and may have to be sunk in one of the others." With this view my study of a number of the collections of lepidoptera made in recent years in Eastern Africa leads me to concur very positively. So very large a proportion of the lepidoptera taken in tropical East Africa also occur in the region of Natal and the Transvaal that it seems to me that it is but natural, at least from an entomological standpoint, to sink the two subregions into one, which might be designated as the Southeastern African Sub-Region. It is characterized especially by the great development of the *Acraeas* of the Horta group, and the numerous species of the genus *Teracolus*, which are but sparingly represented elsewhere upon African soil, and are altogether wanting from the hot wooded valleys of the Equatorial region.

Suborder RHOPALOCERA.

Family NYMPHALIDÆ, Swainson.

Genus DANAIS, Latreille.

DANAIS CHRYSIPPUS, Linnæus, var. KLUGII, Butler.

Limnas klugii. BUTLER, Proc. Zool. Soc. Lond., 1885, p. 758.

Mr. Linell reports three examples of this species in the collection.

DANAIS PETIVERANA, Doubleday.

Danais limniacæ, CRAMER, var. *petiverana*, DOUBLEDAY and HEWITSON, Gen. Diurn. Lep., p. 93, pl. XII, fig. 1 (1847).

Danais leonora, BUTLER, Proc. Zool. Soc. Lond., 1862, p. 51; Lepid. Exot., p. 53 pl. XX, fig. 2.

Mr. Linell reports ten specimens in the collection.

DANAIS FORMOSA, Godman.

Danais formosa, GODMAN, Proc. Zool. Soc. Lond., 1880, p. 183, pl. XIX, fig. 1.

There is a single example of the male of this exceedingly beautiful species, which is still excessively rare in collections, and is mimicked by the wonderful *Papilio rex*, Oberthür.

Genus AMAURIS, Hübner.

AMAUURIS DOMINICANUS, Trimen.

Amauris dominicanus, TRIMEN, Trans. Ent. Soc. Lond., 1879, p. 323; S. Afr. Butt., I, p. 61 (1887).

Mr. Linell reports nine specimens of the male in the collection.

¹Natural Science, August, 1893.

AMAURIS ECHERIA, Stoll.

Papilio echeria, Stoll, Suppl. Cram. Pap. Exot., p. 29, figs. 2, 2b (1791).

Amauris echeria, HÜBNER, Verz. Bek. Schmett., p. 14 (1826).

Danaüs raillantiana, GODART, Encyc. Meth., IX, p. 183 (1819).

Amauris echeria, TRIMEN, S. Afr. Butt., I, p. 57 (1887).

There is a single male specimen of this species. In the lot were several females of *Papilio echerioides*, Trimen, which is a most excellent mimic of this species.

AMAURIS OCHLEA, Boisduval.

Euplaea ochlea, BOISDUVAL, App. Voy. de Deleg. dans l'Afr. Austr., p. 589 (1847).

Amauris ochlea, TRIMEN, S. Afr. Butt., I, p. 60 (1887).

There are three males and one female of this species contained in the collection.

Subfamily SATYRINÆ, Bates.

Genus MELANITIS, Fabricius.

MELANITIS LEDA, Linnæus, var. SOLANDRA, Fabricius.

Papilio leda, LINNÆUS, Syst. Nat., I, 2, p. 773, n. 151 (1767).

Papilio solandra, FABRICIUS, Syst. Ent., p. 500, No. 244 (1775).

Mr. Linell reports five specimens of this species in the collection.

Genus GNOPHODES, Westwood.

GNOPHODES DIVERSA, Butler.

Gnophodes diversa, BUTLER, Ann. and Mag. Nat. Hist. (5), V, p. 333 (1880).

Melanitis diversa, TRIMEN, S. Afr. Butt., I, p. 116 (1887).

The collection contains twelve examples of this species.

Genus MYCALESIS, Hübner.

MYCALESIS SAFITZA, Hewitson.

Mycalesis safitza, HEWITSON, Gen. Diurn. Lep., p. 394, pl. LXVI, fig. 3 (1851); Exot.

Butt., III, p. 80, pl. XL, fig. 4 (1862).—TRIMEN, S. Afr. Butt., I, p. 105.

There are thirty-two specimens of this species, showing that it is abundant in the region where the collection was made.

MYCALESIS PERSPICUA, Trimen.

Mycalesis perspicua, TRIMEN, Trans. Ent. Soc. Lond., 1873, p. 104, pl. I, fig. 3; S. Afr. Butt., I, p. 107 (1887).

Seven specimens.

Genus YPHTHIMA, Hübner.

YPHTHIMA ASTEROPE, Klug.

Hipparchia asterope, KLUG, Symb. Phys., pl. XXIX, figs. 11-14 (1832).

Ypthima asterope, HEWITSON, Trans. Ent. Soc. Lond. (3), II, p. 283 (1865).—TRIMEN, S. Afr. Butt., I, p. 66 (1887).

There are three very badly damaged specimens of this species, which is widely distributed throughout Africa and Asia.

YPHTHIMA HÖHNELI, new species.

Male.—Upper side uniformly grayish brown; fore wing with a large, oval, bipupilled ocellus; hind wing with three ocelli, of which the one nearest the anal angle is small and obsolescent, the other two, situated one on either side of vein 2, are relatively large. On the under side both wings are wood-brown, finely striolated with pale yellowish gray. The striæ are less numerous below the ocellus of the primaries, on the basal third of the secondaries, and on either side of the submarginal series of seven ocelli, which are found also on the secondaries. These tracts in consequence of this lack of the lighter striæ are darker brown than the rest of the wings. The seven ocelli of the secondaries are of moderate size, two of them located between veins 1 and 2 near the anal angle, and one on each of the succeeding interspaces, that nearest the outer angle being the smallest and inclining to obsolescence. All of the ocelli on the under side are pupilled with silvery blue. The iris of the large subapical ocellus of the primaries is relatively wide and bright yellow. The irides of the ocelli of the secondaries are reddish ochraceous. Expanse, 30 mm.

Type.—No. 50, U.S.N.M.

There are two specimens of this species in the Chanler collection, both in a more or less damaged condition, but sufficiently good to permit of an accurate description. The cotype (No. 51, U.S.N.M.) differs from the type in having the ocelli on the under side of the secondaries smaller than in the type and inclining to obsolescence.

Genus NEOCENYRA, Butler.

NEOCENYRA DUPLEX, Butler.

Neocenyra duplex, BUTLER, Proc. Zool. Soc. Lond., 1894, p. 560, pl. xxxvi, fig. 1.

There is one badly damaged specimen of this species.¹

Subfamily ACRÆINÆ.

Genus ACRÆA, Fabricius.

ACRÆA HORTA, Linnæus.

Papilio horta, LINNÆUS, Mus. Lud. Ulr. Reg., p. 234, n. 53 (1764); Syst. Nat., Ed. XII, p. 755, n. 54 (1767).

Acræa horta, GODART, Enc. Meth., IX, p. 231, n. 1 (1819).—TRIMEN, S. Afr. Butt., I, p. 134 (1887).

There are six examples referable to this species.

¹The species named by me *Ypthima chanleri*, Proc. U. S. Nat. Mus., 1895, XVIII, 1895, p. 240, I discover to be identical with a species named *Neocenyra gregorii*, by Dr. Butler in the Proceedings of the Zoological Society for 1894. The reference of the insect to Dr. Butler's genus is what misled me. *Neocenyra* is differentiated from *Mycæsis* by the absence of any swelling at the base of the median vein. It is a very slight basis upon which to create a generic distinction.

ACRÆA NATALICA, Boisduval.

Aeræa natalica, BOISDUVAL, App. Voy. de Deleg. dans l'Afr. Austr., p. 590, n. 57 (1847).

There are numerous examples of this species, male and female, showing that it is quite common in the region visited by the explorers.

ACRÆA ACARA, Hewitson.

Aeræa acara, HEWITSON, Exot. Butt., III, pl. VIII, figs. 19, 20 (1865).

Aeræa caffra, FELDER, Reise d. Nov. Lep., II, p. 369, pl. XLVI, figs. 10, 11 (1865).

Aeræa acara, TRIMEN, S. Afr. Butt., I, p. 159 (1887).

Three males and four females.

ACRÆA ENCEDON, Linnæus.

Papilio encedon, LINNÆUS, Mus. Lud. Ulr. Reg., p. 244, n. 63 (1764).

Papilio encedonia, LINNÆUS, Syst. Nat., I, 2, p. 762, n. 90 (1767).

Papilio lycia, FABRICIUS, Syst. Ent., p. 464, n. 94 (1775); Ent. Syst., III, 1, p. 176, n. 546 (1793).

Aeræa sganzini, BOISDUVAL, Faune Ent. de Madgr., p. 34, pl. 6, figs. 6, 7 (1833).

Aeræa usagara, VUILLOT, Bull. Ent. Soc. France, 1891, p. lxxviii.

The collection contains numerous specimens of this species. Mr. Trimen sinks *A. sganzini*, Boisduval, as a synonym of *A. encedon*, Linnæus. I have reluctantly been compelled with the growth of material in my possession to come to the same conclusion. *A. usagara*, Vuillot, is an extreme form of *sganzini*, Boisduval, in which the white transapical band is entirely suffused with the brownish red color of the wings and the spots are largely obsolescent, though identical in arrangement and form with those found in normal specimens. The most of the specimens in the collection made by Lieutenant von Höhnel are typical *A. encedon*, Linnæus.

ACRÆA INSIGNIS, Distant.

Aeræa insignis, DISTANT, Proc. Zool. Soc. Lond., 1880, p. 184, pl. XIX, fig. 6.

Aeræa burtoni, HEWITSON (nee BUTLER), Ent. Mon. Mag., XIV, p. 155.

Aeræa balbina, OBERTHUR, Etudes d'Ent., XII, p. 6, pl. III, fig. 8.

There are eight specimens of the typical form of this species, in which the black spots of the secondaries at the base do not coalesce to form a large black band.

ACRÆA BUXTONI, Butler.

Aeræa burtoni, BUTLER, Ann. and Mag. Nat. Hist. (4), XVI, p. 395 (1875).

The collection contains six males and two females of this species.

ACRÆA ABBOTTII, Holland.

Aeræa abbottii, HOLLAND, Ent. Sapp., 1892, p. 89; Proc. U. S. Nat. Mus., XVIII, p. 233, pl. VII, fig. 1 (1896).

The collection contains six examples, only one of which is pale ochreous like the types from Kilimanjaro, the others being redder.

The spots on the primaries on either side of vein 2 are variable, some of the specimens being provided with them as in the types, others having only one, and one example being altogether without them.

ACRÆA CABIRA, Hopffer.

Acræa cabira, HOPFFER, Monatsber. d. k. Preuss. Akad. d. Wiss., 1855, p. 640, n. 7; Pet. Reise n. Mossamb., Ins., p. 378, pl. XXIII, figs. 14, 15 (1862).

Two examples.

ACRÆA MIRABILIS, Butler.

Acræa mirabilis, BUTLER, Proc. Zool. Soc. Lond., 1885, p. 760, pl. XLVII, fig. 1.

There is one example of this beautiful insect.

ACRÆA AXINA, Westwood.

Acræa axina, WESTWOOD, App. Oates' Matabeleland, p. 344, pl. F, figs. 5, 6 (1881).

There is a series of twelve males and eleven females of a species, which I identify with some doubt as *A. axina*, Westwood. The females agree quite positively with the description given by Westwood and with the figure, and also with specimens identified as *A. axina* by Mr. Trimen, from Manica, taken by Mr. Selous and contained in my collection, but Mr. Westwood states that his figure is that of a male. The males before me are redder than in the figure given by Westwood, lack the stria between the extremities of the nervures near the apex, and are quite translucent on the subapical tract. The females have the discal area of the primaries and the secondaries broadly whitish. The spots are throughout identical in location and form with those given in Westwood's figure. The specimens appear to me to be a local race of *A. axina*. I can not bring myself to regard it as a new species.

ACRÆA PUDORINA, Staudinger.

Acræa pudorina, STAUDINGER, Exot. Schmett., I, p. 84, II, pl. 33 (1888).

The collection contains a series of twenty-two males and six females of this beautiful species. The females are dark smoky brown and quite distinct in their ground color upon the upper side. Upon the under side they closely approximate the males. The spots are the same in size and location in the two sexes.

ACRÆA HOEHNELI, new species.

Male.—The primaries are translucent, with the apical extremity of the costa and the outer margin narrowly margined with black. The black border is widest at the extremity of the apex. The basal edge of the costa and the base and inner margin laved with dull red. Just within the black border of the outer margin between the nervules is situated a submarginal row of acuminate red, opaque spots. There is a moderately large black spot in the middle of the cell, two coalescing similar spots at the end of the cell and a series of four spots in a straight

line beyond the cell. The latter series and the spot in the center of the cell are equidistant from the spots at the end of the cell. Three similar black spots situated on intervals 1, 2, and 3, form a curved series inwardly convex, just beyond the cell. The secondaries are opaque, light red deepening toward the base of the wing, bordered with deep black, upon which are indistinct traces of lighter markings between the extremities of the nervules. The spots of the under side appear faintly upon the upper side of this wing, the only spots which are distinct being the one at the end of the cell and five beyond it forming a zigzag series. The under side of the primaries is marked precisely as the upper side, except that the submarginal acuminate spots are pale ochraceous, and not red as upon the upper surface. The secondaries are pale yellowish ochraceous, marked with patches of flesh color. They are bordered with deep black, upon which a regular row of pale yellow lunules stands forth sharply defined against the black ground. The base and disk are spotted with numerous moderately large deep black spots, all sharply defined, and those nearest the base ringed about with narrow yellowish lines. The upper side of the thorax is black, with two bright yellow spots on its posterior margin. The upper side of the abdomen is black with a row of circular yellow spots on either side of the median line, increasing in size toward the anal extremity. Below these spots there is on either side a lateral yellow stripe. The under side of the abdomen is pale reddish marked with a double row of black lunulate markings, one on either side of the abdominal aspect of each segment. The lower side of the thorax is black spotted with red spots. The legs are margined with red and the lower sides of the palpi are red. The antennæ are black. Expanse, 60 mm.

Type.—No. 52, U.S.N.M.

This species is allied to *A. doubledayi*, Guenée, and *A. avina*, Westwood, but is abundantly distinct.

ACRÆA PHARSALOIDES, Holland.

Acræa pharsaloides, HOLLAND, Ent. Suppl., 1892. p. 89; Proc. U. S. Nat. Mus., XVIII, p. 232 (1896).

Male.—Does not differ to a marked extent from the female, except that the general ground color of the upper side of both wings is of a much brighter red than in the case of the female, and the transverse subapical bar of black spots is not as wide as in the female, and shows no tendency to coalesce with the spots at the end of the cell, as in the case of the female. The pale fuscous, transverse band situated in the apical region of the primaries of the female is replaced in the male by a band of the same form exactly, but of the prevalent red color of the rest of the wing. The specimen of the male before me is also noticeably smaller than the female from Kilimanjaro in the Abbott collection.

A male exactly like the one in this collection was purchased by me a

number of years ago from Dr. Staudinger, who labeled it *A. pharsalia*. A search in the literature of the subject seems to make it clear that this is a manuscript name; at all events I have no clue to the publication of a species under this name. *A. pharsalus*, Ward, is a well-known species, totally distinct from the one under consideration, as appears from the male specimen before me. While there is a general resemblance between the females of the two species *A. pharsalus* and *A. pharsaloides*, the males differ greatly, as is seen upon comparison. In fact, had I possessed a male of the species at the time I published my original description, I do not think that I would have applied to this form the name which I gave it. The male of *pharsalus*, owing to the distribution of the red and black spots of the primaries, resembles the insects of the Egina group, while the male of *pharsaloides* more closely resembles *A. abdera* and its allies.

Male type.—No. 54, U.S.N.M.

There is a single example of the male of this species. The original type was a female.

ACRÆA PERENNA, Doubleday.

Acræa perenna, DOUBLEDAY, DOUBLEDAY and HEWITSON, Gen. Diurn. Lep., I, p. 141, pl. XIX, fig. 4 (1848).

There are two males not differing materially from specimens from the West Coast, though the red on the lower margin of the primaries is extended a little more broadly toward the base than in the examples in my collection from Sierra Leone and elsewhere.

Genus PLANEMA, Doubleday.

PLANEMA CHANLERI, new species.

The primaries upon the upper side are dark brown, interrupted by a reddish, ochraceous, submacular, discal band, composed of eight spots. Of these spots the five uppermost are narrow and elongated. The two upper spots are short, the three lower ones of the five are advanced inwardly forming a curved inward projection accommodated to the line of the discocellulars, and in serial order from the top of the row to the bottom extend outwardly more and more, at their outward extremities. Just below these spots and projecting still farther outwardly, but not extending as far inwardly, is an oblong quadrate spot. Below this, between veins 2 and 3, is the largest spot of the series, having its outer extremity quadrate, and its inner extremity defined by an oblique line running from about the middle of vein 2 obliquely upward to near the origin of vein 3. Below this on the first median interspace is a small triangular spot with its base parallel to the outer margin and its apex pointing toward the base of the wing. The secondaries are crossed on the middle by a broad, reddish, ochraceous band, with its inner margin approximately straight and its outer margin regularly curved and parallel to the outer margin. The outer margin is bordered by a broad dark brown band, the inner edge of which is regularly produced inwardly on the nervules and at the middle of each interspace. The basal area is rich maroon, profusely

with black. The under side of both wings is marked precisely as the upper side, but the ground color is paler, and the black spots of the basal area of the secondaries in consequence stand forth more conspicuously. The palpi are black, edged with white upon the lower side. The thorax is black spotted with small yellow dots on the under side and having two similar spots on the posterior edge on the upper side. The upper side of the abdomen is black, the lower side light yellowish ochraceous, the yellow color extending upwardly as fine lateral lines on the posterior margins of the segments. In addition there are lateral rows of yellow circular spots on each side of the abdomen. The legs and antennæ are black.

The female is black with the spots and bands of the wings pure white. As is usual in this genus, the wings are broader and more rounded at the apex of the primaries than in the male sex and the body and wings are considerably larger. The macular band of the primaries differs in its outline from that of the male sex in having its outer margin somewhat more regular, and the inner extremities of the spots situated upon the median interspaces even, the spot on interval 2 not projecting inwardly farther than the spot on interval 3, as is the case in the male sex.

Expanse, male, 62 mm; female, 74 mm.

Types.—Nos. 53, 55, U.S.N.M.

Subfamily NYMPHALINÆ.

Genus ATELLA, Doubleday.

ATELLA PHALANTA, Drury.

Papilio phalanta, DRURY, Ill. Nat. Hist., I, pl. XXI, figs. 1, 2 (1770).

There are six examples of this common and widely distributed species.

ATELLA COLUMBINA, Cramer.

Papilio columbina, CRAMER, Pap. Exot., III, pl. 238, figs. A, B (1782).

There are three examples of this species, one badly damaged.

Genus PYRAMEIS, Hübner.

PYRAMEIS CARDUI, Linnæus.

Papilio cardui, LINNÆUS, Syst. Nat., I, 2, p. 774, n. 157 (1767).

Mr. Linell reports five examples of this species.

Genus JUNONIA, Hübner.

JUNONIA CEBRENE, Trimen.

Junonia anoue, HÜBNER, Sammlung Exot. Schmett., II, pl. 31, figs. 1, 2 (nec 3, 4), (1806).

Junonia cebrene, TRIMEN, Trans. Ent. Soc. Lond., 1870, p. 353; S. Afr. Butt., I, p. 210 (1887).

Junonia cebrene, BUTLER, Trans. Ent. Soc. Lond., 1870, p. 521.—GERSTÆCKER, Gliederth.—Fauna des Sansibar-Gebietes, p. 369, n. 17 (1873).

JUNONIA CLELIA, Cramer.¹

Papilio clelia, CRAMER, Pap. Exot., I, pl. XXI, figs. E, F (1779).

Mr. Linell reports ten specimens of this species.

JUNONIA BOOPIS, Trimen.

Junonia boopis, TRIMEN, Trans. Ent. Soc. Lond., 1879, p. 331; S. Afr. Butt., I, p. 217, pl. IV, fig. 2 (1887).

Mr. Linell reports one example of this species.

Genus PRECIS, Hübner.

PRECIS CLOANTHA, Cramer.

Papilio cloantha, CRAMER, Pap. Exot., III, pl. CCCXXXVIII, figs. A, B (1782).

Mr. Linell reports four specimens.

PRECIS NATALICA, Felder.

Precis natalica, FELDER, Wien. Ent. Mon., IV, p. 106 (1860).—TRIMEN, S. Afr. Butt., I, p. 238 (1887).

Mr. Linell reports fourteen specimens.

PRECIS ELGIVA, Hewitson.

Junonia elgiva, HEWITSON, Exot. Butt., III, pl. XIII, fig. 1 (1864).—TRIMEN, S. Afr. Butt., I, p. 240 (1887).

Mr. Linell reports nine specimens.

PRECIS TUGELA, Trimen.

Precis tugela, TRIMEN, Trans. Ent. Soc. Lond., 1879, p. 334 (1887); S. Afr. Butt., I, p. 241, pl. IV, fig. 5 (1887).

The collection contains thirty-seven specimens of this species, only four of which were submitted to me for examination. There are two forms, one with the apex of the primaries very acute and falcate, as represented in the figure given by Mr. Trimen; the other with the apex likewise falcate, but the produced portion truncate at its extremity. I am inclined to think that we are dealing here with a case of seasonal dimorphism analogous to that which we observe in the case of *Junonia almana* and *Junonia asterie*, which are the dry and wet seasonal forms of the same insect. Aside from this difference in the outline and the somewhat more distinct development of the markings in the form with the acute apices of the primaries, I can see no difference sufficient to warrant more than a varietal separation. Being at present engaged in a revision of the African Nymphalidae, I defer any further remarks upon this subject until I shall have had opportunity to more thoroughly go over the species of the genus *Precis*, of which I have enormous suites

¹For full synonymy see Trimen, South African Butterflies, I, p. 214.

from many portions of the continent, with accurate data attached as to the time of their appearance. Suffice it to say, that seasonal dimorphism apparently plays an important part in some of the species.

Genus SALAMIS, Boisduval.

SALAMIS ANACARDII, Linnæus.

Papilio anacardii, LINNÆUS, Mus. Lud. Ulr. Reg., p. 236, n. 55 (1764).

Mr. Linell reports fifty-four examples of this species.

SALAMIS NEBULOSA, Trimen.

Salamis uebulosa, TRIMEN, Trans. Ent. Soc. Lond., 1881, p. 441; S. Afr. Butt., I, p. 246, pl. IV, fig. 6 (1887).

There are twelve specimens of this species in the collection.

Genus EURYTELA, Boisduval.

EURYTELA HIARBAS, Drury.

Papilio hiarbas, DRURY, Ill. Nat. Hist., III, pl. XIV, figs. 1, 2 (1772).

Mr. Linell reports seven specimens.

EURYTELA DRYOPE, Cramer.

Papilio dryope, CRAMER, Pap. Exot., pl. LXXVIII, figs. E, F (1779).

Mr. Linell informs me that there are five specimens of this species in the collection.

EURYTELA OPHIONE, Cramer.

Papilio ophione, CRAMER, Pap. Exot., II, pl. CXIV, figs. E, F (1779).

There are twenty-three specimens of this species, according to Mr. Linell.

Genus HYPANIS, Boisduval.

HYPANIS ILITHYIA, Drury.

Papilio ilithyia, DRURY, Ill. Nat. Hist., II, pl. XVII, figs. 1, 2 (1773).

Mr. Linell reports thirty-four specimens of this insect.

Genus HYPOLIMNAS, Hübn̄er.

HYPOLIMNAS MISIPPUS, Linnæus.

Papilio misippus, LINNÆUS, Mus. Lud. Ulr. Reg., p. 264, n. 83 (1764).

Mr. Linell reports three males and one female of this species.

HYPOLIMNAS WAHLBERGII, Wallengren.

Diadema wahlbergii, WALLENGREN, K. Sv. Vet. Akad. Handl., 1857; Lep. Rhop. Caffr., p. 27, n. 1.

There are two examples of this species in the collection.

Genus NEPTIS, Fabricius.

NEPTIS AGATHA, Cramer.

Papilio agatha, CRAMER, Pap. Exot., IV., pl. CCCXXVII. figs. A, B (1782).

There is one typical example of this well-known form, and a second specimen which may be a mere variety, but may also represent an undescribed species. On the upper side it resembles *N. biinfra*, Ward, on the under side it very closely approximates *N. agatha*. With only the one example I do not feel inclined to describe it as a new species, though more material at a later time may prove that this would be the proper course.

NEPTIS MARPESSA, Hopffer.

Neptis marpessa, HOPFFER, Monatsber. K. Akad. Wiss. Berl., 1855, p. 640, n. 8.—Peters' Reise n. Mossamb., Ins., p. 383, pl. XXIV, figs. 9, 10 (1862).

There are four specimens of this species.

Genus EUXANTHE, Hübner.

EUXANTHE WAKEFIELDII, Ward.

Godartia wakefieldii, WARD, Ent. Mon. Mag., X, p. 152 (1873).

Genus EUPHÆDRA, Hübner.

EUPHÆDRA NEOPHRON, Hopffer.

Romaleosoma neophron, HOPFFER, Monatsber. d. K. Akad. Wiss. Berl., 1855, p. 640.—Peters' Reise n. Mossamb., Ins., p. 386, pl. XXII, figs. 1, 2 (1862).

Mr. Linell determines seven specimens in the collection as belonging to this species.

Genus EURYPHENE, Boisduval.

EURYPHENE SENEGALENSIS, Herrich-Schaeffer.

Euryphe senegalensis, HERRICH-SCHAEFFER, Ex. Schmett., figs. 95-98 (1852-1856).

There are two males and three females, one of the latter in a very fragmentary condition, which seem to be more correctly referred to this species than to any other. The males are in nowise different from the insect figured by Herrich-Schaeffer, but the females more nearly resemble that sex of the well-known *E. coecalia* of the West Coast, save that the subapical transverse spots and bands are not white as in *E. coecalia*, but suffused with dull ochraceous. The insect seems to be a local race of *E. senegalensis*.

Genus HAMANUMIDA, Hübner.

HAMANUMIDA DÆDALUS, Fabricius.

Papilio dædalus, FABRICIUS, Syst. Ent., p. 482, n. 174 (1775).

Mr. Linell reports nine examples.

Genus PALLA, Hübner.

PALLA VARANES, Cramer.

Papilio varanes, CRAMER, Pap. Exot., II, pl. CLX, figs. D, E (1779).

One fairly good example.

Genus CHARAXES, Oehsenheimer.

CHARAXES ZOOLINA, Westwood.

Nymphalis zoolina, WESTWOOD, Gen. Diurn. Lep., pl. LIII, fig. 1 (1850).

There are six males and two females of this species.

CHARAXES NEANTHES, Hewitson.

Nymphalis neanthes, HEWITSON, Exot. Butt., I, p. 88, pl. XLIV, figs. 2, 3 (1851).

There is one specimen of this species.

CHARAXES EUPALE, Drury.

Papilio eupale, DRURY, Ill. Exot. Ent., III, pl. VI, fig. 3 (1782).

One injured specimen.

CHARAXES SATURNUS, Butler.

Charaxes saturnus, BUTLER, Proc. Zool. Soc. Lond., 1865, p. 624, pl. XXXVI, fig. 1; Lep. Exot., p. 5, pl. II, fig. 2 (1869).—TRIMEN, S. Afr. Butt., I, p. 334 (1887).

One specimen.

CHARAXES BRUTUS, Cramer.

Papilio brutus, CRAMER, Pap. Exot., III, pl. CCXLI, figs. E, F (1782).

One specimen.

CHARAXES ETESIPPE, Godart.

Nymphalis etesippe, GODART, Enc. Meth., IX, p. 355, n. 19 (1823).

Four specimens.

CHARAXES CHANLERI, Holland.

Charaxes chanleri, HOLLAND, Proc. U. S. Nat. Mus., XVIII, p. 262 (1896).

The collection contains six males and three specimens of the hitherto undescribed female.

Female.—The upper side of the palpi is black. The upper side of the thorax and abdomen is dark fuscous. The lower side of the palpi and the pectus is white. The lower side of the thorax and abdomen is pale brownish gray. The legs are concolorous. The primaries are fuscous at the base and on the outer margin, the fuscous shade deepening into black toward the center of the wing and the outer angle. The wing is traversed from the costa before the apex by a band of discal spots, gradually increasing in size from the costa to the inner margin. The four uppermost of these spots are curved outwardly in a bent series; the four lower spots are oblong quadrate. All are ochre-yellow, except the two nearest the inner margin, which are washed with white. In addition to this series of spots there are two yellow spots beyond the end of the cell, and a smaller yellow spot at the lower outer angle of the cell. The secondaries are colored at the base as the primaries, with the inner margin dark fawn color. The macular band of the primaries is continued across the secondaries as a white band gradually diminishing in width toward the inner margin, and laced with blue on

either side toward the anal extremity. The outer margin is broadly black beyond this discal band. The wing is bordered from vein 4 upwardly by light brown, and inferiorly toward the anal angle by glaucous green, produced upon the two tails projecting at the extremities of veins 2 and 4. These tails as well as the whole outer margin are edged by a very fine black line. Just within the light brown and greenish marginal border is a submarginal series of bluish white linear spots on the interspaces, bordered externally by black from vein 4 to the anal angle. Upon the under side the wings are marked as in the male, save that the broad macular discal band of the primaries and secondaries is reflected through from the upper side, and owing to the greater size of the wings in the female the spots and markings are more widely separated. Expanse, 65 to 70 mm

Type.—No. 56, U.S.N.M.

CHARAXES XIPHARES, Cramer.

Papilio xiphares, CRAMER, Pap. Exot., IV, pl. CCLXXVII, figs. A, B (1782).

One male specimen.

Family LYCENIDÆ, Stephens.

Genus TINGRA, Boisduval.

TINGRA MOMBASÆ, Smith and Kirby.

Tingra mombasa, SMITH and KIRBY, Rhop. Exot., I, p. 31. Lycaenidæ (Africa), pl. VIII, fig. 11.

Mr. Linell reports ten specimens of this species.

Genus LACHNOCNEMA, Trimen.

LACHNOCNEMA BIBULUS, Fabricius.

Papilio bibulus, FABRICIUS, Ent. Syst., III, 1, p. 307, n. 163 (1793).

Two female specimens.

Genus CHILADES, Moore.

CHILADES MAHALLOKOÆNA, Wallengren.

Lycana mahallokoæna, WALLENGREN, K. Sv. Vet.-Akad. Handl., 1857; Lep. Rhop. Caffr., p. 41, n. 16.

One male and one female.

Genus ZIZERA, Moore.

ZIZERA GAIKA, Trimen.

Lycana gaika, TRIMEN, Trans. Ent. Soc. Lond., 3d series, I, p. 403 (1862).

One male and one female.

Genus CATOCHRYSOPS, Boisduval.

CATOCHRYSOPS OSIRIS, Hopffer.

Lycana osiris, HOPFFER, Monatsber. d. K. Preuss. Akad. Wiss., 1855, p. 642, n. 21; Peters' Reise, n. Mossamb., Ins., p. 409, pl. XXVI, figs. 11, 12 (1862).

One female.

CATOCHRYSOPS ASOPUS, Hopffer.

Lycana asopus, HOPFFER, Monatsber. d. K. Preuss. Akad. Wiss., 1855, p. 642, n. 22.—
Peters' Reise, n. Mossamb. Ins., p. 410, pl. XXVI, figs. 13-15 (1862).

Two females somewhat dwarfed.

Genus HYREUS, Hübner.

HYREUS LINGEUS, Cramer.

Papilio lingeus, CRAMER, Pap. Exot., IV, pl. 379, figs. F, G (1782).

One male.

Genus TARUCUS, Moore.

TARUCUS TELICANUS, Lang.

Papilio telicanus, LANG, Verz. Sein. Schmett., II, p. 47, n. 387-389 (1789).

Six female specimens are contained in the collection.

Genus CASTALIUS, Hübner.

CASTALIUS PERPULCHRA, Holland.

Lycana perpulchra, HOLLAND, Ent. Suppl., Sept., 1892, p. 90; Proc. U. S. Nat. Mus., XVIII, p. 239, pl. VII, fig. 7 (1896).

Castalius hypoleucus, BUTLER, Proc. Zool. Soc. Lond., 1893, p. 660.

Lycana exclusa, TRIMEN, Proc. Zool. Soc. Lond., 1891, p. 47, pl. VI, fig. 11.

One large female in a somewhat damaged condition.

Genus POLYOMMATUS, Latreille.

POLYOMMATUS BÆTICUS, Linnæus.

Papilio bæticus, LINNÆUS, Syst. Nat., Ed. XII, I, 2, p. 789, n. 226 (1767).

There are three males of this common and widely distributed species.

Genus DEUDORIX, Hewitson.

DEUDORIX ANTALUS, Hopffer.

Dipsas antalus, HOPFFER, Monatsber. d. K. Akad. Wiss. Berl., 1855, p. 641, n. 15.

Sithou antalus, HOPFFER, Peters' Reise n. Mossamb., Ins., p. 400, pl. XXV, figs. 7-9 (1862).

One specimen of this species.

Family PAPILIONIDÆ, Leach.

Subfamily PIERINÆ, Swainson.

Genus PONTIA, Fabricius.

PONTIA ALCESTA, Cramer.

Papilio alcesta, CRAMER, Pap. Exot., IV, pl. CCLXXIX, fig. A (1782).

One specimen.

Genus TERIAS, Swainson.

TERIAS ZOË, Hopffer.

Terias zoë, HOPFFER, Monatsber. d. K. Akad. Wiss. Berl., 1855, p. 640.—Peters' Reise n. Mossamb., Ins., p. 369, pl. xxiii, figs. 10, 11 (1862).

Two examples.

TERIAS ÆTHIOPICA, Trimen.

Terias æthiopica, TRIMEN, S. Afr. Butt., III, p. 21 (1889).

One example.

TERIAS BUTLERI, Trimen.

Terias butleri, TRIMEN, S. Afr. Butt., III, p. 23 (1889).

Two examples.

TERIAS REGULARIS, Butler.

Terias regularis, BUTLER, Ann. and Mag. Nat. Hist. (4), XVIII, p. 486 (1876).

Mr. Linell reports thirty-five specimens of this species.

TERIAS BISINUATA, Butler.

Terias bisinuata, BUTLER, Ann. and Mag. Nat. Hist. (4), XVIII, p. 485 (1876).

Two specimens.

TERIAS FLORICOLA, Boisduval.

Xanthidia floricola, BOISDUVAL, Faune Ent. Madgr., p. 21, n. 2 (1883).

There are two males of this species.

Genus MYLOTHRIS, Hübner.

MYLOTHRIS TRIMENIA, Butler.

Pieris trimenia, BUTLER, Cist. Ent., p. 13 (1869).¹

Two females.

MYLOTHRIS, new species or variety. (?)

There is a female specimen of a *Mylothris* very closely allied to *M. berenice*, Hewitson, but differing in having the apical portions of the primaries much less broadly marked with black, and the spots at the ends of the nervules in the secondaries also much smaller in size, in fact reduced to mere points. The surface of the wing is also not nearly as dusky as in specimens of *Berenice* (females) from the West Coast. As the specimen is unique and in rather poor case, I do not feel justified in describing it as a new species, though I am inclined to designate it under the varietal name *Berenicides*. It apparently is an eastern local race of the well-known West African insect.

Type.—No. 57, U.S.N.M.

Genus PIERIS, Schrank.

PIERIS THYSA, Hopffer.

Pieris thysa, HOPFFER, Monatsber. d. K. Akad. Wiss. Berl., 1855, p. 639, n. 1.—Peters' Reise n. Mossamb., Ins., p. 349, pl. xxi, figs. 7-10 (1862).

There is a single male of this species in the collection, and also a single female of the form in which the disk of the wings on the upper side is whitish.

¹ For full synonymy see Trimen, South African Butterflies, III, p. 33.

PIERIS SPILLERI, Spiller.

Pieris spilleri, SPILLER, Ent., 1881, p. 62.—STAUDINGER, Ent. Nachr., 1881, p. 52.

There are five specimens a trifle larger than Natalian examples received from Mr. Spiller and contained in my collection.

PIERIS MESENTINA, Cramer.

Papilio mesentina, CRAMER, Pap. Exot., III, pl. CCLXX, figs. A, B (1782).

There are three males and two females.

PIERIS GIDICA, Godart.

Pieris gidica, GODART, Enc. Meth., IX, p. 131, n. 37 (1819).

There is one male specimen.

PIERIS SEVERINA, Cramer.

Papilio severina, CRAMER, Pap. Exot., IV, pl. CCCXXXVIII, figs. G, H (1782).

Two males and two females.

PIERIS SIMANA, Hopffer.

Pieris simana, HOPFFER, Monatsber. d. K. Akad. Wiss. Berl., 1855, p. 640, n. 13.—Peters' Reise n. Mossamb., Ins., p. 354, pl. XXIII, figs. 3-6 (1862).

There are three males and four females of this species, agreeing absolutely with both the description and the figures given by Hopffer. I can not fail to think that the insect spoken of and catalogued by Trimen as this species is not it. Mr. Trimen himself appears to be in doubt, and dwells upon the fact that in no Natalian examples is there any trace of the black discal spots on the under side of the primaries as represented by Hopffer. He says:

The singular character which Hopffer gives of the presence in the male of the discal blackish spot between third and second median nervules on the under side of the fore wing is entirely wanting in the seven Natalian males before me. I feel doubtful whether this form should be considered more than a variety of *Charina*, Boisduval; hitherto I have seen no examples linking it to the specimens of *Charina* which are little irrorated on the under side.

The specimens taken by Lieutenant von Hölmel are manifestly *P. simana*, Hopffer, and upon comparison with specimens of *Charina*, Boisduval, received from Mr. Trimen, and contained in my collection, it is difficult to see how he could arrive at the conclusion he appears to have reached, unless he was dealing with some other form than true *simana*. There is no approximation between the two species except in a superficial manner.

PIERIS PIGEA, Boisduval.

Pieris pigea, BOISDUVAL, Sp. Gen. Lep., I, p. 523, n. 124 (1836).

There are seven males and four females of this species

PIERIS MAHOBOIDES, new species.

Closely allied to *P. mahobo*, H. Grose Smith.¹ It differs from this species, the habitat of which is Madagascar, by the entire absence of

¹Ann. and Mag. Nat. Hist. (6), VIII, p. 80: Rhop. Exot., Pl. Pinacopteryx I, figs. 1-3.

the small black spot at the end of the cell on the under side of the primaries, and by the more restricted expanse of the apical black markings of the primaries.

Types.—No. 58, U.S.N.M.; two males, one very badly damaged, and a female.

PIERIS AGRIPPINIDES, new species.

Male.—Allied to *P. agrippina*, Felder, but distinct. The male resembles the female of *Agrippina*, as delineated in Mabille's Work on the Lepidoptera of Madagascar, contained in Grandidier's monumental work upon that island, but differs upon the upper side in lacking the black markings upon the upper side of the secondaries except the five situated at the ends of the nervules immediately upon the margin. The primaries on the under side are as the primaries on the under side of *P. agrippina*, female, but the secondaries are marked more as in *P. mesentina*. They are pale yellow, with the nervules marked with brown. On the upper side of the cell are two brown rays, running from before the base outwardly. The anterior margin is narrowly edged with brown. The outer margin is also defined with a narrow brown line, looping inwardly above vein 6, and interrupted at the middle of each of the interspaces. Within this line from vein 1 to vein 6 there are subtriangular whitish spots, paler than the rest of the wing, bounded internally by dark lines meeting on the middle of each interspace, and projected inwardly for a short distance as slender sagittate markings. A brown bar connects the costa and vein 7, and another broader similar bar connects veins 7 and 6 beyond the first bar. Below the cell on interval 1 there are two dark brown spots extending inwardly to the middle of the interval, where they terminate upon a fine black line, which runs from the base to nearly the outer margin. A similar brown spot is found on interval 2 near the origin of the first median nervule. Expanse, 64 mm.

Type.—No. 59, U.S.N.M.

This species is very different from *P. agrippina* and *P. mesentina*, though allied apparently to both. There are two males in the collection.

In addition to the foregoing species of Pierinæ the collection contains four specimens, all female, of Pierids, which I am unable to locate satisfactorily. One of these females may be the female of the variety of *P. thysa*, named *Sabrata* by Dr. Butler. In fact, I am almost positive of the identification. The other three, which resemble this in most respects, except that they do not have the under side of the wings so brilliantly colored, may be aberrant females of *P. pigea*, but it would be rash to assert this without more evidence than I possess. I refrain, therefore, from characterizing them or naming them.

Genus TERACOLUS, Swainson.

TERACOLUS HETÆRA, Gerstaecker.

Callosone hetara, GERSTAECKER, Gliederth.-Fauna d. Sansibar-Gebietes, p. 365, pl. xv, fig. 2.

There are six males and three females of this species.

TERACOLUS IONE, Godart.

Pieris ione, GODART, Enc. Meth., IX, p. 140, n. 74 (1819).

One female specimen.

TERACOLUS HELIOCAUSTUS, Butler.

Teracolus heliocaustus, BUTLER, Proc. Zool. Soc. Lond., 1885, p. 768, pl. XLVII, figs. 8, 9.

One male specimen.

TERACOLUS CALAIS, Cramer.

Papilio calais, CRAMER, Pap. Exot., I, pl. LIII, figs. C, D (1779).

One male.

TERACOLUS CASTALIS, Staudinger.

Idmais castalis, STAUDINGER, Exot. Schmett., I, p. 43, II, pl. 23 (1888).

Three males and two females.

TERACOLUS VENOSUS, Staudinger.

Idmais venosa, STAUDINGER, Exot. Schmett., I, p. 43, II, pl. 23 (1888).

There are five males which agree perfectly with the description given by Staudinger, which is rather better than his figure, which is not characteristic so far as the fine black lines on the disk of the primaries are concerned. In the figure it is not indicated that the white ground is marked by such lines, and the drawing simply indicates the venation. In nature the venation is not visible without the use of artificial means of determining it, except as it is indicated upon the disk by the fine deep black lines upon the median, the radial, and the lower costal nervules from the middle of the wings to the outer margin.

In addition to the five males, there are three females which I think are undoubtedly referable to this species. The female apparently was unknown to Staudinger, and I accordingly append the following description:

Female.—Body much as in the male, antennæ and feet likewise. The wings on the upper side are pure white, somewhat broadly powdered with blackish scales at their base. The primaries have a small oblong ocelliform spot at the end of the cell, followed by a curved band of four to seven maculae running from the costa toward the inner margin across the disk parallel to the outer margin. The spots do not extend beyond vein 1 in the direction of the inner margin in any specimen before me, and in two cases do not pass beyond vein 2. The apex is marked with dark blackish gray clouding gradually diminishing in width from the costa toward the outer angle, which is not reached by these darker markings. This dark area is interrupted by a series of subtriangular, pale, creamy, white spots on the interspaces exactly on the margin. The extremity of each nervule is marked by a minute black dot. On the under side the markings of the upper side of the primaries faintly reappear, and in addition the apical area is faintly powdered with

russety scales. The secondaries on this side are profusely irrorated with russety scales on the disk, forming faint nebulous cloudings. The expanse of the wings is the same as in the male sex.

Types.—No. 60, U.S.N.M.

TERACOLUS WALLENGRENII, Butler.

Teracolus wallengrenii, BUTLER, Proc. Zool. Soc. Lond., 1876, p. 157, n. 105.

Two males.

TERACOLUS METAGONE, new species.

Male.—Head black; antennæ black, margined with whitish on the under side; upper side of the thorax and abdomen black, the under side white; legs white. The primaries are pure white with the costa narrowly edged with deep black from the base to the middle of the wing, and then more broadly edged with black to the apex; the black border extends around the outer margin to the inner angle, just before reaching which it is greatly reduced in width, though not entirely vanishing. Within this border the apical third of the wing is broadly marked from just beyond the middle of the costa to the middle of vein 3 with bright clear orange yellow. The black of the outer margin is produced inwardly upon this orange tract on the ends of the nervules, and the black of the outer margin runs inwardly quite deeply upon vein 3 and less deeply upon vein 2. The apical orange tract is not defined inwardly by a transverse apical black bar. The inner margin is marked by a broad, pale, blackish longitudinal band, which extends from the base for about two-thirds of the length of the inner margin. The secondaries are white upon the upper side, with the base and the costal margin marked with a broad longitudinal band of the same color as that upon the inner edge of the primaries. The outer margin is marked by a series of triangular black spots at the ends of the nervules. These spots do not apparently tend to coalesce with each other. They are smallest toward the anal angle. There is a faint gray shade running from the inner margin above the anal angle outwardly to a point a little above the end of vein 3. The fringes of the secondaries are white, those of the primaries black, except at the apex and at the outer angle, where they are white, as on the secondaries. On the under side both wings are white, both have a minute dot at the end of the cell. The primaries are laved at the apex with pale lemon yellow, across the middle of the yellow tract having a broad transverse shade of clear orange.

Female.—The orange red apical tract of the primaries is more restricted than in the male, and the outer dark marginal border is not as dark as in that sex. Furthermore, the inner edge of the red tract is crossed from the costa to vein 3 by a very irregular curved band of dark spots, narrowest between the upper median and the radial nervules. The base of the primaries and the cell, as well as the portions of the wings below the cell about the origin of the median nervules, are broadly and evenly marked with pale blackish gray. This tract of

dark color is defined outwardly by a line curving from before the middle of the costa to about the lower outer angle of the cell, then running outwardly, parallel to vein 4 for a short distance, then turning down at right angles to vein 2, then running obliquely inwardly to the inner margin, which it meets about one-third of its length from the base. On interval 1, about midway between the dark basal tract and the outer margin, is a broad spot of the same color, with its outer margin sharply defined at right angles to the inner margin and its inner margin obscure and ill defined. The secondaries are white with the base and the costal margin washed with pale gray. A blackish ray runs from the base along the upper margin of the cell, and the outer limit of the dark area is marked on the costa by a marked deepening of the dark shade. The outer margin is broadly suffused with pale gray like that at the base, more or less interrupted on the margin at the extremities of the intervals by paler spaces. On the under side the primaries are marked as in the male, except that the dark basal spots of the upper side reappear below, somewhat indistinctly except about the middle of the wing, where they are deep black and well defined. The markings of the upper side of the secondaries reappear upon the lower side, but much more faintly defined. The outer edges of both wings are faintly laved with yellowish like the apex of the primaries. Expanse, male 35 mm.; female 38 mm.

Types.—No. 61, 62, U.S.N.M.

The collection contains two males and one female of this species, which appears to be, so far as the male is concerned, somewhat closely allied to *T. antigone*, Boisduval, but may at once be distinguished from that species by the absence of the inner dark markings of the apical tract of the primaries in the male. The female is widely different.

TERACOLUS SUBVENOSUS, Butler.

Teracolus subvenosus, BUTLER, Ann. and Mag. Nat. Hist. (5), XII, p. 105 (1883).

There are four males of this species kindly determined for me by Dr. Butler of the British Museum, from a careful drawing, which I prepared and sent him. This is the insect which, in my paper upon the Lepidoptera collected by Dr. Abbott, and in my paper upon the first collection made by Mr. Chanler,¹ I designated as a doubtful variety of *T. garisa*, Wallengren.

TERACOLUS CINCTUS, Butler. (?)

Teracolus cinctus, BUTLER, Ann. and Mag. Nat. Hist. (5), XII, p. 105 (1883).

There are three females in the collection, which I was inclined to believe to be the females of the preceding species, but Mr. Butler, after examining a drawing of them, says that he is inclined to think them to be the as yet undescribed females of the species named *T. cinctus* by him.

¹Proc. U. S. Nat. Mus., XVIII.

TERACOLUS PHLEGETONIA, Boisduval.

Anthocharis phlegetonia, BOISDUVAL, Sp. Gen. Lep., I, p. 576, n. 25 (1836).

One female example.

TERACOLUS EVAGORE, Klug.

Pontia evagore, KLUG, Symb. Phys., pl. VIII, figs. 5, 6 (1829).

One male example.

TERACOLUS JACKSONI, Sharpe.

Teracolus jacksoni, SHARPE, Ann. and Mag. Nat. Hist. (6), V, p. 336.—WATERHOUSE, Aids to Identif. Ins., pl. CLXXXIX (1890).

Five males and two females of this species.

TERACOLUS ACHINE, Cramer.

Papilio achine, CRAMER, Pap. Exot., IV, pl. CCCXXXVIII, figs. E, F (1782).

Three males and one female.

TERACOLUS PROTOMEDIA, Klug.

Pontia protomedia, KLUG, Symb. Phys., pl. VIII, figs. 13, 14 (1829).

One male and one female.

Genus ERONIA, Boisduval.

ERONIA LEDA, Boisduval.

Dryas leda, BOISDUVAL, App. Voy. Deleg. dans l'Afr. Austr., p. 588, n. 30 (1847).

Nine males and two females.

Genus CALLIDRYAS, Boisduval.

CALLIDRYAS FLORELLA, Fabricius.

Papilio florella, FABRICIUS, Syst. Ent., p. 479, n. 159 (1775).

Mr. Linell reports forty specimens of this species.

Subfamily PAPILIONINÆ, Swainson.

Genus PAPILIO, Linnæus.

PAPILIO POLICENES, Cramer.

Papilio policenes, CRAMER, Pap. Exot., I, pl. XXXVII, figs. A, B (1779).

One damaged specimen.

PAPILIO COLONNA, Ward.

Papilio colonna, WARD, Ent. Mon. Mag., X, p. 151 (1873).

Five specimens, three badly damaged.

PAPILIO LEONIDAS, Fabricius.

Papilio leonidas, FABRICIUS, Ent. Syst., III, 1, p. 35, n. 103 (1793).

Mr. Linell reports seven specimens.

PAPILIO DEMOLEUS, Linnæus.

Papilio demoleus, LINNÆUS, Mus. Lud. Ulr. Reg., p. 214, n. 33 (1761).

Mr. Linell reports twelve of this species.

PAPILIO OPHIDICEPHALUS, Oberthür.

Papilio ophidicephalus, OBERTHÜR, Etudes d'Ent., III, p. 13 (1878).

There is one specimen of this species.

PAPILIO NIREUS, Linnæus.

Papilio nireus, LINNÆUS, Mus. Lud. Ulr. Reg., p. 217, n. 36 (1764).

Mr. Linell reports seven examples of this species.

PAPILIO ECHERIOIDES, Trimen.

Papilio echerioides, TRIMEN, Trans. Ent. Soc. Lond., 1868, p. 72, n. 2, pl. VI, figs. 1, 2.

There are twenty-one males and four females of this species, one of the females badly damaged.

Family HESPERIIDÆ, Westwood.

Genus SARANGESA, Moore.

SARANGESA MOTOZI, Wallengren.

Pterygospidea motozi, WALLENGREN, K. Sv. Vet.-Akad. Handl., 1857; Lep. Rhop. Caffr., p. 53.

One example.

Genus EAGRIS, Guenée.

EAGRIS ASTORIA, new species.

Male.—Antennæ black. Palpi black, margined below with yellow. Upper side of head, thorax, and abdomen dark brown. Lower side of thorax and abdomen ochreous gray. Legs concolorous. The primaries upon the upper side are vinous brown, slightly clouded with blackish at the base, and broadly clouded with blackish at the apex and the outer margin. The end of the cell is ornamented with two small light-colored translucent spots surrounded with black, the lower spot produced outwardly beyond the other. There are four small subapical white spots in the usual position. There is a discal series of four small translucent spots surrounded with blackish. Of these, two, the smallest, are located on interval I beyond the middle; the third in the ascending series, between the first and second median nervules, is the largest, and is subtriangular with its apex toward the costa; the fourth, between the second and third median nervules, is smaller, and transversely elongated. In addition, there are two small parallel dashes of black on interval 1, one third of the distance from the base. The secondaries upon the upper side are of the same color as the primaries, slightly clouded with blackish at the outer angle, and marked with obscure

macular bands of darker brown, parallel to the outer margin, one crossing the end of the cell, another on the disk and more distinct than the rest, and one submarginal. The fringes of both wings are concolorous, except near the anal angle of the secondaries, where they are lighter. On the under side both wings are bright buff yellow. The primaries have the apical third washed with pale brown, interrupted by an obscure submarginal series of lunate markings slightly darker than the ground color of the wings. There is a dark spot at the end of the cell, and the translucent spots are less well defined upon this side, not being surrounded by as dark brown margins as upon the upper side. The secondaries are touched with pale brown at the outer angle, and are ornamented with a curved series of distinct black submarginal spots, the one over the end of the cell on the costal area being the largest. The two nearest the anal angle are larger than the others, excepting the one last mentioned, and are triangular in form, with their apices pointing outwardly. Expanse, 36 mm.

Type.—No. 63, U.S.N.M., unique.

This species is wholly distinct from any other species in the genus known to me, coming nearest to *E. phyllophila* in the general appearance of the upper side, but widely different and wholly unlike that species on the under side.

Genus HESPERIA, Fabricius.

HESPERIA AGYLLA, Trimen.

Pyrgus agylla, TRIMEN, S. Afr. Butt., III, p. 286 (1889).

There is one example of this species.

Genus PADRAONA, Moore.

PADRAONA ZENO, Trimen.

Pamphila zeno, TRIMEN, Trans. Ent. Soc. Lond. (3), II, p. 179 (1864); S. Afr. Butt., III, p. 313, pl. XII, fig. 2 (1889).

There is one male example of this species.

Suborder HETEROCERA.

Family AGARISTIDÆ.

Genus XANTHOSPILOPTERYX, Wallengren.

XANTHOSPILOPTERYX SUPERBA, Butler.

Euscemia superba, BUTLER, Ann. and Mag. Nat. Hist. (4), XV, p. 141, pl. XIII, fig. 3 (1875).

One specimen.

XANTHOSPILOPTERYX FATIMA, Kirby.

Xanthospilopteryx fatima, KIRBY, Trans. Ent. Soc. Lond., 1891, p. 288, pl. XV, fig. 2. Two examples.

Family LITHOSIIDÆ.

Genus UTETHEISA, Hübner.

UTETHEISA PULCHELLA, Linnæus.

Tinea pulchella, LINNÆUS, Syst. Nat., I, p. 534, n. 238 (1758).

Two specimens.

Genus ARGINA, Hübner.

ARGINA AMANDA, Boisduval.

Euchelia amanda, BOISDUVAL, App. Voy. Deleg. dans l'Afr. Austr., II, p. 597, n. 133 (1847).

Six specimens.

Family HYP SIDÆ.

Genus ELIGMA, Hübner.

ELIGMA LÆTEPICTA, Oberthur.

Eligma lætepieta, OBERTHUR, Etudes d'Ent., XVII, p. 32, pl. I, fig. 6 (1893).

Eleven specimens.

Family NYCTEMERIDÆ.

Genus NYCTEMERA, Hübner.

NYCTEMERA LEUCONOE, Hopffer.

Nyctemera leuconoe, HOPFFER, Monatsber. d. K. Akad. Wiss. Berl., 1857, p. 422.—
Peters' Reise n. Mossamb., Ins., p. 430 pl. XXVIII, fig. 3 (1862).

Five specimens.

Family LIPARIDÆ.

Genus RHANIDOPHORA, Wallengren.

RHANIDOPHORA PHEDONIA, Stoll.

Bombyx phedonia, STOLL, Cramer's Pap. Exot., IV, pl. cccxlvii, fig. C (1782).
Isochroa charnigutta, FELDER, Nov. Reise, Ins., pl. c, fig. 26.

One specimen.

Family LASIOCAMPIDÆ.

METAJANA, new genus.

Tongue obsolete. Palpi small, densely covered with hairs; terminal joint projecting downward. Front densely clothed with long appressed hairs projecting downward and overlapping the extremity of the palpi. Antennæ moderately long, bipectinate, the pectinations moderately long, both series compressed and projecting downwardly much as in the genus *Jana*. The tegule are moderately long, covering the insertion of the primaries and the secondaries. Abdomen robust, projecting beyond the anal angle of the secondaries for one-fourth of its length. The femora and tibiæ of all of the legs are densely covered with long hairs. The primaries have the costa nearly straight for three-fourths of their length from the base and slightly curved before the apex; the

outer margin broadly convex, evenly scalloped between the extremities of the nervules; the inner margin straight from the outer angle to near the base, where it is sharply curved inwardly and upwardly; the cell short and narrow, its upper margin somewhat widely removed from the costa; veins 3 and 4 spring from the lower outer angle of the cell; veins 5, 6, and 7 spring from the upper outer angle of the cell; veins 7 and 8 spring from a common stalk arising before the upper outer angle of the cell; vein 12 is slightly curved beyond the base and anastomoses at its extremity on the costa with vein 11 and with vein 12a, which springs from the base and extends along the extreme outer baso-costal margin for about one-fourth of its distance from the base. In the secondaries the cell is open; vein 2 has its origin approximately equidistant between the base and vein 3; veins 3, 4, and 5 spring from a common point representing the lower outer angle of the cell; veins 6 and 7 spring from a common point representing the upper outer angle of the cell; vein 8 is stoutly curved at its inner extremity and anastomoses before its basal origin with the upper discocellular.

Type.—*M. chanleri*, Male, Holland.

METAJANA CHANLERI, new species.

Palpi, front, and collar dark reddish brown. Tegulae and thorax gray, sprinkled with dark-brown scales. Upper side of abdomen pale reddish brown, becoming darker toward the anal extremity. The legs and the lower side of the abdomen and thorax are dark reddish brown. The antennae are black. The primaries are grayish white, profusely sprinkled with dark-brown scales. An obscure dark-brown clouded line runs from the base outwardly through the cell and is slightly interrupted just beyond the extremity of the cell. This longitudinal band fuses with the obscure transverse band which runs from near the apex to the middle of the inner margin, its outer margin being exceedingly irregularly indented. Between the indentations are some obscure whitish sagittate markings, with their points toward the base. The secondaries are pale reddish on the inner margin, of the same color as the base of the abdomen. The costal and outer margins are of the same color as the primaries, obscurely and profusely mottled with dark brown and crossed by obscure curved submarginal and discal bands, and by a narrow median curved band, which is sharply defined on the costa, where it is black, and vaguely defined on the reddish inner area of the wing. On the under side both wings are pale reddish brown, profusely mottled, especially on the costal and outer areas, by small dark-brown scales, most numerous on the costa of the secondaries. Expanse, 100 mm.

Type.—No. 64, U.S.N.M., male.

Mr. Linell reports, in his note accompanying the sending of the specimens to me, two other specimens of this species reserved in the collection.

Group NOCTUÆ.

Family OMMATOPHORIDÆ.

Genus CYLIGRAMMA, Boisduval.

CYLIGRAMMA LATONA, Cramer.

Phalœna latona, CRAMER, Pap. Exot., 1, 20, pl. XIII, fig. B.

Mr. Linell reports three specimens of this species.

Family OPHIDERIDÆ.

Genus OPHIDERES, Boisduval.

Ophideres chalcogramma, WALKER, Cat. Lep. Het. Brit. Mus., XXXIII, p. 937 (1865).

Two specimens.

Family DYSGONIIDÆ.

Genus ACHÆA, Hübner.

ACHÆA Sp. (?).

A damaged example of a species unknown to me, and which I hesitate to describe as new, without better material.

In addition to these there are two specimens of geometers, which I can not now take the time to determine. Both are small and obscure.